

EPA Follow-On Comments based upon the September 9, 2015 teleconference discussion of DEQ and EPA review comments to the July 2015 document entitled, Basis of Design Report – Groundwater Source Control Measure, Premier Edible Oils Site, Portland, Oregon (BOD report) prepared by ERM-West, Inc.

Submitted September 14, 2015

1. Two conclusions from the September 9, 2015 conference call were:
 - (A) The basis of design document (BOD) will be revised. Follow on comments below are provided with intentions to be addressed in the revised BOD;
 - (B) A 100% design document will be prepared and provided for review.
2. Based on discussions during the September 9, 2015 conference call, the objective of the groundwater barrier (as stated in Section 2.3 of the Basis of Design Report) has been changed from “prevent potential migration of LNAPL and dissolved phase TPH to the Willamette River” to “prevent potential migration of LNAPL to the Willamette River.” Given this change in objective, delimiting the extent of LNAPL near MW-18 and MW-23 is critical in documenting that the proposed extent of the barrier wall would potentially achieve the objective. Historic detections of LNAPL at MW-18 (2012) and increasing LNAPL thickness at MW-23 (0.16 feet in June 2015) indicate that the proposed extent of the barrier wall is potentially insufficient to meet the LNAPL containment objective. The MH –series geotechnical borings were cited during the teleconference call as providing delineation of the extent of LNAPL at MW-23 and apparently the basis for the proposed extent of the wall. However, soil borings are not appropriate for delineation of LNAPL. At best, the borings can provide a preliminary qualitative indication of LNAPL conditions. Given the uncertainty in the extent of LNAPL near the endpoints of the proposed barrier wall, it is critical that the “potential cluster wells” shown in Figure 4 of the Basis of Design Report be installed and installation should be completed immediately following construction of the barrier wall trenching. These wells should be designed and installed specifically for LNAPL collection and to provide an understanding of LNAPL occurrence and dissolved contaminant concentrations in shallow and deep groundwater at these locations. Post-construction monitoring of these wells should be initiated as soon as possible and not wait on completion of the oxygen biobarrier design and monitoring plan. The purpose of this monitoring is to: (A) determine whether LNAPL containment objective is achieved by the barrier wall; and (B) evaluate post-construction migration of LNAPL and other contaminants along the wall. The results of the initial sampling at these wells will address data gaps related to the presence of LNAPL and dissolved contaminant concentrations at these locations and should be used to determine if these areas need additional action in the oxygen biobarrier design.
3. Given the refined or focused objective of the BOD related to the barrier wall’s containment of LNAPL, the revised BOD should provide specific remedial action objective statements that identify the LNAPL containment that is to be achieved. For example, the teleconference discussion indicated that the barrier wall is intended to contain only the thickest portion of the LNAPL. The objective statements should quantify thickness or a range of LNAPL thickness that would meet the containment objective. Such quantitative or semi-quantitative objectives could be used to support locating and installing wells for confirmation and/or performance monitoring mentioned in comment number 2.
4. EPA requests the opportunity to review the hydraulic data and/or modeling that was referred to as key to the design of the barrier wall, so that we may have a better understanding of the basis of the barrier wall design, how the wall may affect groundwater movement, and to assess the barrier wall’s effectiveness. The property owner’s representatives expressed high confidence during the conference

call that the proposed barrier wall will provide containment of the LNAPL and that lateral movement of LNAPL around the wall is of no concern. During the call, we learned that the confidence in LNAPL containment is based on previous hydraulic analysis, groundwater modeling, and apparently low groundwater velocity. None of this information was presented in the Basis of Design Report or the Conceptual Design Report for the groundwater barrier wall. However, DEQ has documentation of these analyses and stated that the documentation will be provided to EPA as requested. It is important that EPA reviews the hydraulic data to have a better understanding of the basis of the barrier wall design, how the wall will affect groundwater movement, and to assess the barrier wall's effectiveness.

5. EPA requests the opportunity to review the results of the bench-scale compatibility study and the contractor's treatability study to assess whether the contractor's proposed mix is compatible with the design performance specifications. This request is based upon the following information. The Basis of Design Report Section 2.4.3 states that a compatibility bench test study was performed with "favorable" results for various slurry mix formulations using site specific soil, groundwater, and LNAPL were conducted and provided to guide the contractor in slurry mix selection. In addition, the section states that the contractor will be required to test their proposed backfill mix with a bench scale and/or field test to document that the mix meets the required barrier wall hydraulic conductivity requirements. Based on discussion at the conference call, these "treatability studies" are either completed as stated in the document, or ongoing, by the contractor, and may not be completed before the final design. During the call we learned that the contractor has selected a 6% bentonite-soil mix that will be part of the 100% design.